

Urban Water Conservation Grant Application for Hollydale Mutual Water Company

A-4 Project Description

The HOLLYDALE MUTUAL WATER COMPANY¹ (Hollydale), seeks funding to carry out basic and necessary water conservation measures. Hollydale provides water for domestic use and is located in Sonoma County. Shareholders pay a flat monthly rate and no metering of use occurs. The water source is the underflow of the Russian River. By permit, Hollydale has been appropriated 14,800 gallons of water per day.

The proposed project is designed to repair a system that loses a large volume of fresh water due to leakage and older appliances. The Hollydale system was designed and constructed from 1965-67. It consists of a well 30' from the Russian River that is 50' deep. The well is equipped with two 3hp submersible pumps that are capable of supplying 45 gallons per minute at the wellhead pressure of 132psi. Distribution is through approximately 2,700' of six-inch AC main, 650' of 2-inch PVC main, and 340' of AC main. There is an additional 450' of 6-inch steel and 4 inch PVC pipe that supplies water from the well to the chlorinating facility. Three quarter inch copper laterals serve 30 households. The system is served by a single 20k-redwood tank and has four fire hydrants. The well, distribution lines (with the exception of the PVC), laterals and the storage tank are the original parts. There is clearly leakage at the tank and at various points in the distribution system.

The specific purpose and goals for which Hollydale seeks funding is to reduce and eliminate, if possible, loss of water due to leaks and to apply modern technology to the system and homes in order to conserve additional water. The objectives of the proposed project are to identify failures in the distribution and storage system, repair and replace leaking components, install water-saving devices in as many homes as possible.

Methods and Procedures: Hollydale has initiated a dialogue with the California Rural Water Association. Technical assistance from the CRWA will ensure the likelihood of success of this project. Consultation is scheduled for December 2002 or January 2003. When funded, Hollydale will solicit bids from qualified engineers to conduct a detailed audit of its system. Design of result based monitoring and assessment of the feasibility and success of the project will be a part of the audit. Hollydale will commence repairs utilizing qualified personnel. Households will be canvassed and encouraged to participate in the program. Hollydale will research pricing of, and obtain, modern water saving devices (front loading washing machines, low flow toilets, meters, and point of use water heaters). Finally, Hollydale will oversee the installation of the devices in homes.

Expected Outcomes and Benefits and Costs: Significant water savings are expected to result from the completion of the proposed project. The costs will consists of compensation for professional assistance, materials, qualified labor, and a component of volunteer labor provided by water-users. The benefits will include water savings that serve the interest of California as the demand on fresh water resources increases and will include benefits to the natural environment.

¹ – Permit Number 15297 and License Number 12863; location – S1/2 of SE1/2 of Section 25, T8S, R10W, MDB&M Sonoma County, California

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A-6 Project Plan

The proposed conservation project is simple in design. An audit of the system will be performed. Leak detection will be followed by repairs and monitoring. Water-wasting plumbing problems, identified in audit and subject to retrofit, will be carried out. The failing storage tank will be repaired or replaced. Residents will be educated and encouraged to install front loading washing machines, low flush toilets, meters, and point of use water heaters as a part of the water conservation program.

There are three portions of the project that could receive separate funding and are severable from the remainder of the project: 1) the system audit with the repairs/retrofit, 2, repair or replacement of the storage tank and 3) the purchase and installation of water saving devices.

Tasks:

- System Audit - obtains bids from qualified Engineers, carry out audit
- System Repairs – obtain bids from qualified companies, carry out repairs and renovations
- Storage Tank – repair or remove old tank, replace with new tank if necessary
- Water Conservation Program – contact households by mail, invite individuals to take advantage of the educational component of the project, carry out door to door canvass to identify households that will be participating, obtain water-saving devices, oversee the installation of devices

Work Schedule (all dates and dollar amounts are approximate):

System: Audit May 15, 2003 through July 1, 2003

Cost: \$10,000

System Repairs: July 15, 2003 through December 15, 2004

Cost: \$50,000

Storage Tank: July 1, 2003 through August 1, 2003

Cost: \$10,000

Water Conservation Program: June 1, 2003 through December 1, 2003

Cost: \$19,000

Quarterly Expenditure Projection:

1 st May 15 through August 16, 2003	\$10,000
2 nd August 15 through November 16, 2003	\$50,000
3 rd November 15 through February 16, 2004	\$19,000
4 th February 15 through May 16, 2004	\$10,000

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A-7 Monitoring and Evaluation

Hollydale will design, with the assistance of professionals in the field, procedures for determining baseline information and weekly measuring and reporting of the water usage after the repairs and conservation program have been implemented. Such monitoring will include, but not be limited to, measurement at the tank, reading meter at the pump, and calculations of water savings per participating household.

A quarterly report describing the elements of the project that have been initiated and completed as well as the results of the weekly monitoring, in graph and statistical format, will be made available via electronic mail and US Mail to all households in the system.

A-8 Qualifications of Applicant and Cooperators

The maintenance operator for Hollydale is currently Tony Black. He is certified as a T1 Operator, certificate 20592 expires on May 5, 2004. He has been a shareholder since 1984, assisted the previous maintenance operator from 196 through 1996, and has been the licensed operator since 1997. He has served the corporation at various times as an officer and Director. His training includes a semester course on basic water operation from the Santa Rosa Junior College in addition to several continuing education seminars. In 2003, he will receive training for and obtain his D1 certificate.

A-9 Innovations

Hollydale seeks to outreach to the community in an innovative manner in order to maximize participation in the water conservation program. A dramatization is planned that will demonstrate the benefits of water conservation. In addition, Hollydale will install the most modern and economically feasible point of use water heaters, front loading washing machines, and monitoring devices.

A-10 Agency Authority

1. The applicant does have the legal authority to enter into a funding contract with the State. It is a licensed water company that has received a permit to divert and use water from the state of California (see attached resolution of the Board of Directors, License for Diversion and Use of Water).
2. The applicant is a company in good standing formed under the laws of the state of California and is a holder of a license and a permit to use and divert water issued by the state of California (see attachments)
3. Yes the applicant is required to hold an election of the Board of Directors before entering into a funding contract with the State.
4. Due to the low impact of the proposed project, for example, installation of point of use water heaters, replacement of storage tank, and repair of leaking pipes, Hollydale does not anticipate that the proposed project will be subject to review or approval by other

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government agencies. If any government were to have jurisdiction, it would most likely be the County of Sonoma.

5. There is no pending litigation that may impact the financial condition of the applicant, the operation of the facility, or its ability to complete the proposed project.

A-11 Operation and Maintenance

N/A

B. Engineering and Hydrologic Feasibility

N/A

C. Plan for Completion of Environmental Documentation and Permitting Requirements

N/A

D. Need for Project and Community Involvement

D-1 Need: This project is necessary in order to permit this small water company to repair weaknesses in its old system. Because the company has a small rate base, customers already pay above average water rates. Due to the weaknesses in the older system, special assessments are occasionally necessary. Special assessments are a hardship for some customers. These weaknesses also appear to result in substantial losses of water. Due to loss of water, the electrical bills to run the pumps is much higher than normal. In addition, Hollydale is the only domestic water supply for the community. The Board considers the situation to be unsustainable.

D-2 Outreach, Community Involvement, Support, Opposition

Hollydale will invite all customers to a forum to report on the results of the project including the water savings, the number of homes that participated, question and answer period, and exploration of ideas on ways in which to increase water savings in the future. It is estimated that at least 66 people will benefit from the project. In addition to gaining knowledge with respect to measures to conserve water, participating households will receive instruction on the installation and maintenance of the front loading washing machines, low flow toilets, meters, and point of use water heaters. Given the limited scope and nature of the project, there is not expected to be any opposition to the project.

E. Water Use Efficiency Improvements and Other Benefits

E-1 Water Use Efficiency Improvements: Implementation of this project will increase water use efficiency by reducing the cost associated with the use of the water. Eliminating leakage will

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result in substantial decrease in pumping and associated electrical costs. In addition, the net value of the previously wasted water will be increased as a result of the increase of the supply of water that will be made directly available to the environment. Less water will be taken from the river and its aquifer in order to meet the domestic needs of the community.

E-2 Other Project Benefits: see above

F. Economic Justification: Benefits to Costs

F-1 Net Water Savings: Front-loading washing machines will substantially reduce the waste of water to septic systems or unusable water sources. One load of washing in a conventional machine requires between 35 and 45 gallons of water. In a front loading machine, that amount of water is reduced to between 15 and 20 gallons. Front loading machines can be purchased at prices that compete with conventional machines, but some models can also be purchased for much more. If an average family does three loads a week a conservative estimate on water savings would be 45 gallons per week or 2,340 gallons a year per household (16,380/7 years). In addition, low flow toilets achieve similar dramatic reductions in water use.

The point of use water heaters mounted under the sink will substantially reduce the loss of usable water to septic systems or unusable sources. It is estimated that the project will prevent at least 10% of water needed in hot water applications from simply being wasted. Users will no longer have to run the tap for 60 or more seconds at a time awaiting the hot water from the conventional water heater reaching the faucet. These localized heating pumps can be purchased for approximately \$200 per unit.

Low flow toilets use approximately 50 percent less water than conventional toilets. Hollydale expects to conserve 2 to 3 gallons of water per flush which will translate into a significant savings over even 7 year's time (63,875gallons saved for two person home over a 7 year period 10/day).

Use-meters will of course raise awareness with respect to water conservation and the cost associated with water use. Meters will encourage self-regulation.. This will ultimately result in less water wasted.

Installation of the above devices compounds efficiency. Less water wasted translates directly in to less pumping and less fuel and electricity expended.